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ABSTRACT

To determine the effect of a legislated increase in the minimum wage in Ontario, 219 establishments in five industries were surveyed. The industries were shoe factories; luggage, handbag, and small leather goods manufacturers; hosiery mills, children's clothing industry; and the foundation garment industry. Data were gathered at three different times: just before the increase, shortly after the increase, and one year after the increase. The increase saw an immediate reduction in the number of employees earning less than the new minimum, but over the course of a year, it was not possible to isolate the effect of the minimum wage on employment. More than half the establishments raised product prices in the year following the wage increase. Following a period of compression of the labor structure by increasing wages at the lower end, the differentials established prior to the revision were re-established. It is generally concluded that the immediate gains to the low-paid employees are eroded in the long run. The level of hourly earnings increased, but changes in employment, hours of work, systems of payment, and production techniques could not be attributed to the wage increase. (AG)

Ontario Ministry of Labour
The Honourable Fern Guindon, Minister
R.D. Johnston, Deputy Minister

Research Branch
August 1973

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Prepared by
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FOREWORD

This study is the second one prepared by the Ministry of Labour that attempts to measure the impact in five manufacturing industries of the January 1, 1969 thirty cent per hour increase in Ontario's minimum wage. The first, published in September 1970 and entitled "The Short-Run Impact of the Thirty Cent Revision in Ontario's Minimum Wage on Five Industries", attempted to measure the impact of the change less than a month after it occurred. This study looks at the longer-term adjustments and takes into account information collected in late January and February 1970, more than a year after the thirty cent increase. The overall purpose of the project has been to obtain information on how employers adjust to such a substantial legislated wage increase and what the consequences are for their employees.

The first study noted a major compression of rates at the lower end of the wage scale, but the longer-run look makes it clear that this compression was only temporary. During the year that elapsed between the two surveys the occupational differentials that existed prior to the minimum wage increase were, for the most part, re-established and in some cases increased. Even though the experience in the five industries may not hold true for all situations, these findings raise questions about the effectiveness of the statutory minimum wage for altering income distributions and how a minimum wage program should be administered.

The study attempts to measure other effects of the thirty cent increase, such as changes in employment, hours of work, systems of payment, production techniques, and prices. The impact on these factors proved extremely difficult to measure. However, prices were increased by many of the establishments surveyed during the year following the minimum wage adjustment, and in a majority of these cases the increases were justified by reference to increased labour costs.

The study, which is part of the Labour Ministry's continuing effort to improve its own and public understanding of the minimum wage program, has been delayed in publication because of resource limitations. Credit for preparing the report goes primarily to Ian McKenna and Frank Whittingham of the Ministry's Research Branch, but many others were involved in collecting information and preparing the report for publication.

JOHN KINLEY,
Director,
Research
Branch.

THE LONG RUN IMPACT OF THE THIRTY CENT REVISION IN ONTARIO'S MINIMUM WAGE ON FIVE INDUSTRIES

INTRODUCTION

The minimum wage principle first gained legislative acceptance in Ontario in 1920 with passage of the Minimum Wage Act. This Act applied only to women and children but, in 1963, minimum wage legislation was effectively extended to males.[1] The present purpose of the legislated floor rate in Ontario is to provide the highest possible wage rate for low-paid workers without incurring unacceptable costs in terms of unemployment. This minimum rate has been adjusted periodically to take into account changes in living costs and the general level of wages.

Few would quarrel with the goal of assisting low wage workers, but there is a body of opinion which observes that continual adjustment of the minimum floor rate disturbs the prevailing structure of wage rates and arbitrarily imposes an increase in labour costs on affected employers. These factors may generate adverse side effects that may detract from or even eliminate both the economic and social benefits predicted by proponents of the statutory minimum wage.

One adverse side effect predicted by classical economic theory is that the increase in labour costs associated with a higher statutory minimum wage will cause employers to reduce the amount of labour employed. The decline in employment of labour may be matched by a fall in output but, alternatively, employers may substitute capital equipment for the relatively more expensive factor of production labour. An increase in the statutory floor wage rate may increase labour costs indirectly as well as directly. Indirect labour cost increases may arise from market and institutional pressures to re-establish original wage differentials within the firm (and indeed the whole economy) that have been distorted because of an increase in a legislated floor rate.

Displacement of workers is not necessarily undesirable if they can be redeployed into other industries. However, imperfect mobility of workers among occupations and geographical areas hinder redeployment and unemployment may result. This can be a particular problem in small communities where sources of alternative employment are limited. Displace-

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[1] For an account of the historical development of minimum wage legislation in Ontario, see Minimum Wages in Ontario, Frank Whittingham, Industrial Relations Centre, Queen's University, Research Series, No. 11, pp. 3-9.

ment of labour can be avoided if firms can compensate for higher labour costs by raising product prices. The ability to do so depends largely on whether the price elasticity of final product demand is sufficiently low to allow prices to rise without an offsetting decline in quantity demanded in the market. In highly competitive markets such as textile manufacturing, the ability to absorb labour cost increases by raising product prices may be rather restricted. Low price-elasticity of product demand is likely to be of particular significance where domestic output is in close competition with imports.[2] In some cases, labour cost increases may cause domestic firms to improve efficiency to protect their competitive position but, in other cases, their very survival may be seriously threatened.

Purpose and Scope of the Study

The purpose of this study is to obtain some empirical insight into the effect of a change in the statutory minimum wage rate on wage rates, employment and behaviour of the firm. To this end the Research Branch of the Ontario Ministry of Labour undertook an assessment of the impact of a thirty cent an hour increase in the minimum wage on five selected low wage industries. The increase was introduced on January 1st, 1969 when the statutory minimum was increased from $1.00 to $1.30 per hour.

A total of 219 establishments were surveyed in the following five industries:

Shoe Factories;
Luggage, Handbag and Small Leather Goods Manufacturers;
(identified as "Small Leather Goods" in Tables)
Hosiery Mills;
Children's Clothing Industry;
Foundation Garment Industry.

The selection of these industries was based on two considerations. First, a resource constraint required that the industries be small enough to permit the collection of detailed data. In addition, they had to have characteristics which suggested they would be sensitive to an upward revision in the minimum wage. All five industries meet these criteria.[3]

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[2] This includes imports from other Canadian provinces as well as from foreign countries.

[3] For a discussion of the characteristics of the selected industries, see Part I of the study The Short-Run Impact of the Thirty Cent Revision in Ontario's Minimum Wage on Five Industries, Ontario Dept. of Labour, Research Branch (Sept. 1970) pp. 4-11.

The overall study was designed to permit analysis based on three points in time: November 1968, shortly before the minimum wage revision; January 1969, shortly after the increase; and a point in time one year after the increase, January 1970. Payroll information for each non-supervisory employee was collected for payroll periods at the three points in time.[4] These data included standard and actual hours of work, bonus or commission, gross earnings and initial overtime rate. As well, the number of employees were identified by sex and by office or non-office category.

In addition to the collection of quantitative data, employers were asked a number of open-ended questions to determine whether adjustments were implemented in response to increased labour costs generated by the upward revision in the minimum wage. The questions covered such matters as changes in system of payment (time rate, piece rate), work periods, job classifications, personnel policies, organization of the flow of work, degree of mechanization, product lines and product prices. Relevant to a number of these potential adjustments is the question of their impact on employment.

All establishments in the five industries were identified through lists obtained from the Dominion Bureau of Statistics.[5] A field enumeration staff was used to collect the quantitative data directly from records maintained by the establishments and also to obtain the non-quantitative information by interviewing responsible persons in each establishment. The results of the total study are contained in two reports.[6] Since this report is in many respects an extension of the first, the main findings of the first report are reviewed in the following section.

Review of Findings of First Report

The main focus of the first report was on the "direct impact" or short-run effects of the upward revision in the statutory minimum wage and analysis was confined to data for the first two points in time, November 1968 and January 1969. The immediate effect of the thirty cent revision was reflected by an upward shift in the lower end of the distributions of non-supervisory employees by wage class between November 1968 and January 1969 which caused a compression in the wage

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[4] The payroll periods were those ending November 30, 1968, January 18, 1969 and January 17, 1970.

[5] A total of 219 establishments were identified as of November 30, 1968.

[6] See first report, op.cit.

structure. In the five industries, as a whole, 3,447 (21.3 per cent of the total) employees had hourly earnings of less than $1.30 an hour in November 1968. After the minimum wage revision the number earning less than $1.30 was 982 (6.2 per cent of total employees).[7] In the short run, the wage increase arising from the minimum wage legislation served not only to compress the distribution of hourly wage rates within each of the five industries but to reduce the absolute and percentage differentials in average hourly wage rates between the Ontario manufacturing sector as a whole and each of the five selected industries.

Data in the first report also revealed that the thirty cent revision in the floor rate had a proportionately greater impact on smaller firms. For establishments with less than twenty-five employees, approximately twenty-five per cent of the non-supervisory employees received a wage increase because of the thirty cent revision. However, for establishments in the size categories fifty to ninety-nine and one hundred or more employees, this proportion was 20.4 and 13.4 per cent respectively.

In the first survey, respondents were asked a number of questions to determine whether or not adjustments had been made to offset their increased labour costs. As anticipated in the design of the study, the time lapse between November 1968 and January 1969 was too short to allow employers to contemplate, design and implement many changes. While some adjustments in price, product lines and labour force were observed, it was recognized that complete analysis of the adjustment process could only be undertaken with the benefit of data for the third point in time. Further, with regard to employment adjustments, a strong seasonal decline in employment precluded any judgments as to the short-run impact of increased labour costs on employment attributable to the revised minimum wage.

Organization of Report

As noted earlier, this report is an extension of the first in that it analyzes data for the third point in time as well as for the first and second points. In subsequent sections there is a brief examination of the short and long-run effects of the minimum wage revision on the distribution of hourly wage rates and also an analysis of the short-run and long-run

[7] The group of workers most substantially affected by the minimum wage increase was non-office, time-rate female employees.

patterns of wage differentials. Of particular interest is the observation that the initial compression of the wage structure caused by the minimum wage revision tends to disappear over the longer period. This is seen to hold true not only for intra-industry differentials but also for inter-industry differentials.

Another section of the report deals with employer adjustments to the minimum wage revision and whether there is evidence that such adjustments give rise to negative employment effects. It is concluded, however, that the effects of a number of variables not controlled for in the analysis, especially a cyclical downswing, precludes any meaningful assessment of the use of employment cut-backs as an adjustment to higher wage costs.

In the final section of the report, the findings are reviewed and some tentative conclusions are drawn. As well, suggestions are offered with regard to the direction of subsequent research.

EMPLOYEES DIRECTLY AFFECTED BY THE THIRTY CENT INCREASE

An almost immediate effect of the thirty cents an hour increase in Ontario's legal minimum wage was a reduction in the number of employees earning less than the new statutory minimum. Table 1 demonstrates that, between November 1968 and January 1969, the number of employees earning less than $1.30 an hour, in the five selected industries as a whole, fell from 3,447 (21.3% of all employees) to 982 (6.2% of all employees). The earlier report acknowledged that, due to a seasonal contraction in employment and the absence of time series data, the precise impact of the minimum wage revision could not be measured.

Table 1 reveals that, while the bulk of wage rate adjustment to the new floor took place in January 1969, the proportion of employees earning less than $1.30 an hour fell from 6.2 per cent in January 1969 to 2.0 per cent in January 1970. It is not possible to determine how much of the long-run reduction was by way of delayed compliance with the $1.30 statutory floor rate and how much to wage increases resulting from the normal functioning of the labour market. Furthermore, the reduction in the proportion of employees earning less than $1.30 might also have been due in part to a greater than average reduction in employment of workers earning below $1.30 per hour as of January 1969. This study is unable to test the latter hypothesis.

The 282 employees earning less than $1.30 an hour in January 1970 may reflect some non-compliance with the law but it should be noted that

Table 1

Number of Employees as a Percentage of Total in Category Earning Less than $1.30 an Hour in Selected Pay Periods for Selected Industries, Ontario

Employees Earning Less Than $1.30 an Hour

Industry and Employee Category	Number of Employees									Percentage of Total Employees								
	November 1968			January 1969			January 1970			November 1968			January 1969			January 1970		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Shoe Factories																		
Non-office	111	1,225	1,336	35	441	476	14	118	132	4.5	26.7	18.9	1.4	9.8	6.8	0.6	2.8	2.0
Office	2	28	30	0	10	10	0	0	0	0.8	6.4	4.4	0	2.2	1.4	0	0	0
Total	113	1,253	1,366	35	451	486	14	118	132	4.2	24.9	17.7	1.3	9.1	6.3	0.5	2.5	1.8
Small Leather Goods																		
Non-office	36	416	452	10	67	77	3	35	38	4.8	26.9	19.7	1.4	4.5	3.5	0.5	2.4	1.8
Office	0	2	2	0	2	2	0	0	0	0	1.5	0.8	0	1.5	0.9	0	0	0
Total	36	418	454	10	69	79	3	35	38	4.2	24.9	17.9	1.2	4.3	3.2	0.4	2.2	1.6
Hosiery Mills																		
Non-office	37	699	736	35	141	176	4	52	56	6.1	32.8	27.0	5.8	7.0	6.7	0.8	3.0	2.5
Office	0	2	2	0	1	1	0	0	0	0	1.6	1.3	0	0.8	0.7	0	0	0
Total	37	701	738	35	142	177	4	52	56	5.9	31.1	25.6	5.6	6.6	6.4	0.8	2.8	2.4
Children's Clothing																		
Non-office	9	395	404	2	141	143	0	38	38	7.3	35.5	32.7	1.6	14.0	12.6	0	4.0	3.6
Office	3	16	19	3	3	6	0	0	0	21.4	16.3	17.0	21.4	3.2	5.5	0	0	0
Total	12	411	423	5	144	149	0	38	38	8.7	34.0	31.4	3.7	13.3	12.0	0	3.7	3.3
Foundation Garments																		
Non-office	3	462	465	1	89	90	0	18	18	1.8	33.2	29.9	0.6	6.8	6.1	0	2.0	1.8
Office	0	1	1	0	1	1	0	0	0	0	1.0	0.8	0	1.0	0.8	0	0	0
Total	3	463	466	1	90	91	0	18	18	1.6	31.1	27.7	0.5	6.4	5.7	0	1.8	1.5
All Five Industries																		
Non-office	196	3,197	3,393	83	879	962	21	261	282	4.8	29.7	22.8	2.1	8.5	6.7	0.6	2.8	2.2
Office	5	49	54	3	17	20	0	0	0	1.2	5.4	4.1	0.7	1.9	1.5	0	0	0
Total	201	3,246	3,447	86	896	982	21	261	282	4.4	27.8	21.3	1.9	8.0	6.2	0.5	2.6	2.0

the legislation made provision for a minimum rate of $1.20 an hour to be paid to trainees. Over eighty per cent of these 282 employees were paid a rate of between $1.20 and $1.30 an hour so it is likely that only a small proportion of those earning less than $1.30 an hour were victims of non-compliance.

Within the selected industries, Shoe Factories had the greatest absolute number of employees at less than $1.30 an hour for all three points in time but, in relative terms, the Children's Clothing industry had the largest proportion of employees with hourly wage rates below $1.30 at all three points in time.

Distribution by Sex

For all five industries, twelve months after the thirty cent increase, 261 (92.6%) of the 282 employees earning less than the new $1.30 an hour minimum were female (see Table 1). This fact indicates a disproportionate representation of females in the below $1.30 range inasmuch as only 71.7% of total employees were female. These proportions changed very little over the three points in time. In November 1968 and January 1969 the proportion of female employees earning less than $1.30 an hour were 94.2% and 91.2% respectively, while females accounted for 72.1% and 71.6% of the total work force in the five industries. No inference on sex discrimination with respect to remuneration should be drawn from these data.[8] The figures merely suggest that the lowest paid jobs in the five industries tended to be filled by females.

Office and Non-Office Distribution

Before the minimum wage revision, the number of office workers earning less than $1.30 an hour was small in relation to non-office workers in that wage category. In November 1968 only 1.6% of employees earning less than $1.30 an hour (all five industries) were office workers and only 4.1% of all office employees in the five industries combined earned less than $1.30 an hour. By January 1970 there were no office employees with earnings below the legal minimum wage rate.

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[8] Analysis of wage discrimination on the basis of sex would require detailed occupation wage rate data by sex.

Size of Establishment

Prior to the minimum wage increase, the percentage of employees earning less than $1.30 an hour tended to vary inversely with size of establishment (see Table 2). In four of the five industries[9] and for the aggregation of all five, the smallest establishment class (less than ten employees) had the highest percentage of employees earning under $1.30 an hour. However, by January 1970, establishments with less than ten employees had either the lowest or second lowest proportion of employees with an hourly wage rate of less than $1.30. These observations suggest that, in relative terms, the minimum wage revision had a greater effect on smaller establishments.

IMPACT ON WAGE DIFFERENTIALS

It was expected that an immediate effect of the minimum wage legislation would be a narrowing of wage differentials between employees at the bottom of the pay scale and all other employees. An examination of the degree of dispersion of wage rates within each of the selected industries before and after the legislation of January 1, 1969 confirms this expectation. For this purpose, hourly wage rates of female non-office employees have been used because, as was demonstrated in the first report,[10] the minimum wage revision had its strongest direct impact on this group. The measure used for the analysis is the coefficient of dispersion.[11] Table 3 presents the value of this coefficient for each industry at the three points in time. Between November 1968 and January 1969, there was a definite decline in the degree of dispersion of hourly wage rates of female non-office employees in each of the five selected industries.

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9 In the Foundation Garment Industry the 10 to 49 employees category was the smallest as there were no establishments with less than 10 employees.

10 The Short-Run Impact of the Thirty Cent Revision in Ontario's Minimum Wage on Five Industries, p. 15 and Table 10.

11 The coefficient of dispersion is derived from the formula $\frac{Q3-Q1}{M}$ where Q1 is the first quartile, Q3 the third quartile and M the median hourly wage rate. A fall in the value of the coefficient signifies a reduction in the degree of dispersion of hourly wage rates.

Table 2

Number and Percentage* of Employees Earning Less than $1.30 an Hour by Size of Establishment, Selected Dates and Industries, Ontario

Industry – Establishment Size (no. of employees)	November 1968		January 1969		January 1970	
	Number No.	Percentage %	Number No.	Percentage %	Number No.	Percentage %
SHOE FACTORIES						
Less than 10	10	24.4	4	10.5	1	0.5
10 to Less than 50	150	31.0	50	11.6	14	3.7
50 to Less than 250	859	19.8	332	7.7	114	2.9
250 and Over	347	12.1	100	3.5	3	0.1
TOTAL	1,366	17.7	486	6.3	132	1.8
SMALL LEATHER GOODS						
Less than 10	21	26.6	4	5.1	1	0.6
10 to Less than 50	147	26.4	23	4.2	11	2.3
50 to Less than 250	243	18.7	38	3.[illegible]	23	2.2
250 and over	43	[illegible].1	14	2.3	3	0.5
TOTAL	454	17.9	79	3.2	38	1.6
HOSIERY MILLS						
Less than 10	27	61.4	6	13.6	0	0
10 to Less than 50	190	42.9	38	9.3	14	3.5
50 to Less than 250	366	21.8	107	6.5	38	2.3
250 and Over	155	21.6	26	3.8	4	1.4
TOTAL	738	25.4	177	6.4	56	2.4
CHILDREN'S CLOTHING						
Less than 10	18	39.1	4	8.5	4	3.9
10 to Less than 50	161	25.8	39	9.3	11	3.1
50 to Less than 250	211	34.5	97	16.9	23	4.3
250 and Over	33	13.8	9	4.5	0	0
TOTAL	423	31.4	149	12.0	38	3.3
FOUNDATION GARMENT						
Less than 10	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
10 to Less than 50	16	51.6	0	0	0	0
50 to Less than 250	226	23.2	18	1.9	8	1.1
250 and Over	224	33.1	73	11.5	10	2.4
TOTAL	466	27.7	91	5.7	18	1.5
ALL FIVE INDUSTRIES						
Less than 10	76	36.2	18	8.7	6	1.9
10 to Less than 50	664	34.0	150	8.7	50	3.8
50 to Less than 250	1,905	21.4	592	6.8	206	2.6
250 and Over	802	15.7	222	4.4	20	0.2
TOTAL	3,447	21.3	982	6.2	282	2.0

n.a. means there was no establishment in the industry with less than ten employees.

* Each percentage refers to total number of employees in the relevant establishment size category.

This is consistent with the expectation that an increase in a minimum wage has the immediate effect of raising the rates paid to employees at the bottom end of the pay scale and thereby compressing the wage structure.

By January 1970, however, the coefficient of dispersion for each industry had moved upward again. Furthermore, in the case of Small Leather Goods, Hosiery Mills and Foundation Garment industries, the January 1970 coefficients of dispersion were above those of November 1968, reflecting a higher degree of dispersion in the wage structures one year after the minimum wage revision than before the effective date of the revision.

Table 3

Coefficient of Dispersion of Hourly Wage Rates of Female Non-Office Employees in Selected Periods and Selected Industries, Ontario

Industry	Value of Coefficient			% Changes in Coefficient	
	Nov. 1968	Jan. 1969	Jan. 1970	1968-69	1969-70
Shoe Factories	0.353	0.292	0.300	-17.3	+ 2.7
Small Leather Goods	0.224	0.186	0.224	-17.0	+20.4
Hosiery Mills	0.343	0.279	0.344	-18.7	+23.3
Children's Clothing	0.383	0.297	0.318	-22.5	+ 7.1
Foundation Garment	0.315	0.292	0.327	- 7.3	+12.0

These observations are consistent with the hypothesis that over the longer term there is a tendency toward the reassertion of original wage differentials that have been compressed in the short run by a legal minimum wage. There is a rationale for expecting this re-expansion. Through a minimum wage increase, the wages of the lowest paid employees are raised and brought into equality with workers who were initially above them in the wage structure. Assuming that wage rate structures reflect differences in levels of skills and responsibilities associated with jobs, an employer is likely to be under institutional or market pressure to restore the former differentials to reflect these differences. Differentials may be restored in the long run not only by awarding special increases to higher wage groups but by placing a moratorium on subse-

quent annual increments to employees whose wage rates were boosted by the minimum wage increase.

Some evidence of the latter adjustment has been observed in a series of collective agreements (covering 180 employees) between a shoe factory and the Boot and Shoe Worker's Union. In April 1967, the parties to the collective agreement decided that the lowest paid group of workers be paid a minimum hourly rate of $1.10 while the highest paid group received $1.35. In April 1968, both groups received under the collective agreement a further six cents an hour, raising their hourly rates to $1.16 and $1.41 respectively. In April 1969, a new two-year agreement was concluded, giving the lowest paid group $1.30 an hour which had been their legal due since January 1969. The highest paid group received twelve cents an hour increase, giving them a rate of $1.53. As a result, the lowest paid group received an increase of fourteen cents an hour, two cents an hour more than the highest paid group. In the April 1969 agreement, however, rates for the year commencing April 1970 were also specified. The lowest paid group was given a raise of only two cents an hour while the highest paid obtained a seven cents an hour increase from $1.53 to $1.60. Consequently, in spite of the January 1969 minimum wage revision, the lowest paid group received a smaller absolute increase (sixteen cents an hour) between April 1968 and April 1970 than did the highest paid group (nineteen cents an hour).

These various adjustments are summarized in Table 4. As can be seen,

Table 4

Hourly Wage Rates of Selected Employees, According to Collective Agreement in a Selected Shoe Factory, April 1967 to April 1970, Ontario

Starting Date	Employee Hourly Rates ($)		Difference Between Highest and Lowest Rates	
	Highest Paid	Lowest Paid	Absolute ($)	%
April 1967	1.35	1.10	.25	18.5
April 1968	1.41	1.16	.25	17.7
January 1969	1.41	1.30	.11	7.8
April 1969	1.53	1.30	.23	15.0
April 1970	1.60	1.32	.28	17.5

the immediate impact of the minimum wage increase was to greatly reduce both the absolute and the percentage difference between the hourly rates obtained by the highest and the lowest paid groups. However, the collective agreement of April 1969 ensured that, by April 1970, the percentage difference in hourly rates was almost identical to that which existed in April 1968 before the minimum wage adjustment. Furthermore, the absolute difference between the highest and the lowest paid groups was greater in April 1970 than in April 1968.

In the Hosiery Mills there is also evidence of collective bargaining which worked toward a re-establishment of the wage differentials in existence prior to the distortion created by the increase in the minimum wage. Table 5 shows collectively agreed wage rates before and after the January 1967 minimum wage legislation for different occupational categories.

Table 5

Collective Agreement Rates for Selected Occupational Categories in a Selected Hosiery Mill, July 1967 to June 1971, Ontario

Occupational Category	Collectively agreed Wage Rate $		
	July 1967 to June 1969	July 1969 to June 1970	July 1970 to June 1971
Seamers	8.00 per 100 dozen	8.48 per 100 dozen	8.88 per 100 dozen
Knitters	1.92 per hour	2.04 per hour	2.14 per hour
Finishers	1.00 per hour	1.30 per hour	1.30 per hour

When the minimum wage legislation became effective, finishers were being paid one dollar an hour,[12] as stipulated by the two year collective agreement of July 1967. When this agreement expired, finishers had been receiving a rate of $1.30 an hour for approximately six months because of

[12] After three months' probation.

the establishment of the $1.30 statutory minimum in January 1969. In the two year agreement signed in July 1969, it was stipulated that finishers would receive $1.30 until the expiry of the agreement in June 1971. Seamers and knitters, however, were awarded increases of around eleven per cent over the two years of the agreement.

The movement of hourly rates of finishers relative to knitters, over time, is summarized in Table 6. Until the revision of the legal minimum wage, the hourly wage rate of finishers was fifty-two per cent of that paid to knitters. The proportion increased to sixty-eight per cent on January 1, 1969 (assuming adherence to the new law) but the new two-year agreement signed on July 1, 1969, which gave knitters an eleven per cent increase over two years and pegged the rate paid to finishers at $1.30, caused the rate received by finishers to fall relative to that received by knitters.

Although the relative position of finishers deteriorated between January 1, 1969 and July 1, 1970, their relative position at the latter point was an improvement on that of July 1, 1967. The minimum wage increase appears to have been of some benefit to the finishers in both relative and absolute terms but it is evident that there has been a tendency toward a re-establishment of the former inter-job differentials which might be completed over a longer period of time, in the absence of further increases in the minimum wage.

Collective agreements are not particularly common in the five selected industries, so it is difficult to generalize from just two observations.

Table 6

Ratio of Minimum Hourly Rates of Finishers and Knitters in Selected Time Periods, Selected Hosiery Mill, Ontario

Time Period	a/b*
July 1, 1967 to December 31, 1968	0.52
January 1, 1969 to June 30, 1968	0.68
July 1, 1968 to June 30, 1970	0.64
July 1, 1970 to June 30, 1971	0.61

* a = finisher's hourly rate b = knitter's hourly rate

However, these collective agreements do lend some explanation to the suggestions made from the survey data that there was a tendency for the initial narrowing of differentials, caused by the minimum wage increase, to be reversed in the long run. Consequently, the relative gains made by the lowest-paid categories may be only very short-run in nature.

Male and Female Hourly Wage Rate Differentials

This aspect can be explored further by comparing the movement of first quartile[13] hourly wage rates of male and female non-office employees in the five selected industries. The usefulness of this comparison lies in the fact that female non-office employees clustered around the bottom end of the pay scale in November 1968 and consequently the thirty cent increase had its largest impact on this group. In contrast, there was only a very minor direct effect on the wage rates of male non-office employees.

The statistics in Table 7 reveal that in four of the five selected industries (Small Leather Goods the exception), there was a fall in both the absolute and the percentage differences between male and female non-office hourly rates (first quartile) between November 1968 and January 1969. This is the expected immediate impact of the minimum wage legislation, because of the predominance of female non-office employees at the bottom of the pay scale.

Over the longer time period, January 1969 to January 1970, there is evidence of widening in both the absolute and the percentage differences between male and female non-office hourly wage rates. In the case of both the Children's Clothing and Foundation Garment industries, the percentage difference between male and female hourly rates was larger in January 1970 than it was before the minimum wage increase (November 1968).

Before leaving this question, it should be noted that the analysis is very limited because of the short time span. In the absence of longer time series data, it is impossible to discern whether the minimum wage legislation caused a temporary reversal of a trend of deterioration in the hourly wage rates of the lowest paid female non-office employees relative to lowest paid male non-office employees, or whether the deterioration that occurred

[13] Use of the first quartile is preferable to the arithmetic mean or median because the former allows a closer analysis of the relevant low wage categories. The first quartile is the item which lies one quarter way through a distribution (c.f. the median and third quartile).

between January 1969 and January 1970 was a direct reaction to the short run distortions created by the minimum wage legislation.

Table 7

Comparison of the First Quartile Hourly Wage Rates of Male and Female Non-Office Employees, Selected Industries and Time Periods, Ontario

Industry	Hourly Wage Rates $			Absolute ($) and Percentage Differences Between Male and Female Wage Rates *					
	Nov. 1968	Jan. 1969	Jan. 1970	Nov. 1968		Jan. 1969		Jan. 1970	
				Abs	%	Abs	%	Abs	%
Shoe Factories									
Male	1.75	1.80	1.98	.46	37.5	.43	31.4	.49	32.9
Female	1.29	1.37	1.49						
Small Leather Goods									
Male	1.83	1.92	2.06	.54	41.9	.56	41.2	.63	44.1
Female	1.29	1.36	1.43						
Hosiery Mills									
Male	1.70	1.71	1.87	.45	36.0	.36	26.7	.44	30.8
Female	1.25	1.35	1.43						
Children's Clothing									
Male	1.65	1.73	2.02	.43	35.2	.40	30.1	.63	45.3
Female	1.22	1.33	1.39						
Foundation Garment									
Male	1.78	1.83	2.09	.52	41.3	.47	34.6	.68	48.2
Female	1.26	1.36	1.41						

* Absolute difference ($) between the male and female rates.
Percentage differences use female wage rates as base.

Office – Non-Office Hourly Wage Rate Differentials

The movement of first quartile hourly wage rates of female non-office employees can also be compared with those of female office employees. Again, the comparison involves one group whose wage rates were consid-

erably affected by the minimum wage increase with a group not greatly affected. In the five industries, 29.7 per cent of the female non-office employees earned less than $1.30 an hour in November 1968, whereas only 5.4 per cent of the female office employees were in this category. The expectation that the short-run impact of the minimum wage legislation would reduce wage differentials is again confirmed (see Table 8).

Table 8

First Quartile Hourly Wage Rates of Office and Non-Office Female Employees for Selected Industries, Ontario, November 1968, January 1969 and January 1970

Industry	Hourly Wage Rates ($)			Ratio of Wage Rates * Non-Office/Office		
	Nov. 1968	Jan. 1969	Jan. 1970	Nov. 1968	Jan. 1969	Jan. 1970
Shoe Factories						
Non-Office	1.29	1.37	1.49	.85	.88	.86
Office	1.51	1.56	1.73			
Small Leather Goods						
Non-Office	1.29	1.36	1.43	.80	.81	.78
Office	1.62	1.69	1.84			
Hosiery Mills						
Non-Office	1.25	1.35	1.43	.83	.84	.72
Office	1.50	1.61	1.98			
Children's Clothing						
Non-Office	1.22	1.33	1.39	.71	.74	.59
Office	1.71	1.81	2.02			
Foundation Garment						
Non-Office	1.26	1.36	1.41	.65	.70	.66
Office	1.95	1.95	2.13			

* Ratio first quartile non-office wage rate to first quartile office wage rate.

In two of the five selected industries, the increases in the ratio were small but in the other three (Shoe Factories, Children's Clothing and

Foundation Garment), they were fairly substantial. By January 1970, this ratio had fallen well below its January 1969 level in each of the five industries. In fact, for Small Leather Goods, Children's Clothing and the Hosiery Mills, the respective ratios of female non-office and female office hourly wage rates were lower in January 1970 than in November 1968. Given this evidence, it appears that the narrowing of female non-office/office hourly rate differentials caused by the increased minimum wage was only a temporary phenomenon and that the original ratios were strongly reasserted over the longer time period.

The foregoing evidence is consistent with the hypothesis that short-run gains by low paid employees may be subject to erosion in the longer run. There is clearly some evidence from the collective agreements discussed that employees benefitting from the minimum wage increase were awarded extremely small wage increases in subsequent collective agreements with the result that the relative short-run gains of the lowest paid group tended to be quickly eroded. This may justify the tentative conclusion that if the relative long-run position of the lowest paid employees is to be improved, fairly frequent revisions of the statutory minimum wage may have to be made.

LEVEL OF HOURLY EARNINGS

The first report recognized that the thirty cents an hour increase in the minimum wage gave rise to an above-normal advance in average hourly earnings for the industries under review.[14] This is illustrated in Table 9 where movements in average hourly earnings in the manufacturing sector as a whole and the five selected industries are presented. Between November 1968 and January 1969, the increase in average hourly earnings in each of the five selected industries was considerably higher than for the total manufacturing sector.[15] The rise in average earnings in manufacturing was only 1.8% while in the selected industries the increases ranged between 4.8% and 9.8%

[14] It is recognized that the rise in average hourly earnings might be partly explained by a disproportionate reduction in employment of low wage employees.

[15] The manufacturing sector data are not entirely comparable with the individual industry data because the former are provided by the Dominion Bureau of Statistics and do not give information for establishments with less than twenty employees.

Table 9

Average Hourly Earnings for the Manufacturing Sector and Selected Industries, Ontario, November 1968 January 1969 and January 1970

Industry	Average Hourly Earnings $			Percentage Changes	
	Nov. 1968	Jan. 1969	Jan. 1970	Nov. 1968– Jan. 1969–	Jan. 1969– Jan. 1970–
Manufacturing [a]	2.79	2.84	3.08	1.8	8.5
Shoe Factories [b]	1.89	1.98	2.08	4.8	5.1
Small Leather Goods	1.73	1.87	1.95	8.1	4.3
Hosiery Mills	1.72	1.81	1.86	5.2	2.8
Children's Clothing	1.67	1.77	1.86	6.0	5.1
Foundation Garment	1.64	1.80	1.91	9.8	6.1

[a] Man-Hours and Hourly Earnings, Cat. No. 72-003, Dominion Bureau of Statisitcs, Ottawa. Figures are for hourly-rated wage earners.

[b] Figures for the five selected industries are for all employees and are obtained by dividing total payroll by number of hours worked.

These changes affected average hourly earnings differentials between the manufacturing sector and each of the five surveyed industries. Table 10 shows that from November 1968 to January 1969 there was a reduction in both the absolute and percentage differentials between the average hourly rate in each of the selected industries and the average rate in the manufacturing sector. While firm generalizations would require a greater number of observations, this limited analysis suggests that the minimum wage revision caused a short-run compression of the inter-industry wage structure.

Table 10 further demonstrates that the increase in average hourly earnings in manufacturing (8.5%) during the twelve month period January 1969 to January 1970 was significantly higher than the increases that occurred in the selected industries (2.8% to 6.1%). These movements in hourly earnings reversed the compression in inter-industry wage differentials that occurred between November 1968 and January 1969. Between

Table 10

Absolute and Percentage Average Hourly Earnings Differentials Between the Manufacturing Sector and Selected Industries, Ontario, November 1968, January 1969 and January 1970.

INDUSTRY	November 1968			January 1969			January 1970		
	Average Hourly Earnings $	Absolute Difference $	Percentage b Difference	Average Hourly Earnings $	Absolute Difference $	Percentage Difference	Average Hourly Earnings $	Absolute Difference $	Percentage Difference
Manufacturing a	2.79	–	–	2.84	–	–	3.08	–	–
Shoe Factories	1.89	.90	32.3	1.98	.86	30.3	2.08	1.00	32.5
Small Leather Goods	1.73	1.06	38.0	1.87	.97	34.2	1.95	1.13	36.7
Hosiery Mills	1.72	1.07	38.4	1.81	1.03	36.3	1.86	1.22	39.6
Children's Clothing	1.67	1.12	40.1	1.77	1.07	37.7	1.86	1.22	39.6
Foundation Garment	1.64	1.15	41.2	1.80	1.04	36.6	1.91	1.17	38.0

a Man-Hours and Hourly Earnings, Cat. No. 72-003, The Dominion Bureau of Statistics.

b This gives the difference between the individual industry rate and the manufacturing rate as a percentage of the manufacturing rate.

January 1969 and January 1970, there was an increase in both absolute and percentage differentials between the manufacturing sector as a whole and each of the five selected industries (see Table 10). Further, the absolute differentials between the manufacturing sector and each of the surveyed industries were greater in January 1970 than in November 1968 before the minimum wage revision.

While the number of observations is limited, the foregoing data are consistent with findings presented in other studies in U.S. and Canadian jurisdictions. Accordingly, a question arises about the viability of a statutory minimum wage as a device to manipulate income distribution in the North American setting. If the institutional character of the Ontario labour market permits the relative wage gains of the lowest wage groups to be quickly eroded after a minimum wage revision, the effectiveness of the statutory minimum as a device for narrowing earnings differentials is subject to question. Indeed, if the pressures to re-establish previous intra-industry differentials are themselves inflationary, the initial gains in purchasing power enjoyed by the lowest paid groups may be quickly eroded.

Proponents of the statutory minimum support their position by citing its apparent success in Sweden and other European countries but it must be recognized that, in these countries, the institutional character of the labour market is rather different from that which prevails in North America. In Sweden, wage bargaining is sufficiently centralized to allow public policy to be fairly well reflected in the structure of wage rates. The essentially plant bargaining system in North America and the emphasis placed on internal equity in the wage structure makes it rather difficult for broad goals of public policy to be transmitted to the bargaining table. While the statutory minimum wage may be viable in a centralized bargaining situation, it may be ineffective in a more fragmented one. Consequently, in labour markets which are not characterized by a high degree of central bargaining, it would appear that a statutory minimum wage should not be regarded as an effective tool for manipulating income distribution.

EMPLOYER ADJUSTMENTS TO MINIMUM WAGE REVISION

This section examines adjustments made by employers in response to increased labour costs arising from both the direct and indirect effects of the minimum wage revision. To accomplish this, two types of data are used. First, an examination is made of employment changes that occured

during the twelve months after the minimum wage revision of January 1969 to determine whether employment reductions were significantly more pronounced among employee groups affected most directly by the higher minimum wage. Second, information obtained by interviewers through the use of open-ended questions one year after the minimum wage revision is drawn upon. The questions aimed at identifying employer adjustments to the higher labour costs generated by the minimum wage revision and particularly establishing the impact of the increase in the minimum wage upon employment.

At the outset, it should be stressed that the influence on employment of factors other than the change in the minimum wage makes it extremely difficult to interpret the data and isolate the "minimum wage" effect. In light of the analytical difficulties encountered, suggestions are made, in the final section of this study, for further research to assess the impact of minimum wage revisions on employers in low wage industries.

Adjustments Available to Employers

Classical economic theory predicts that, other things remaining the same, the higher labour costs associated with an upward movement in the minimum wage will generally lead to reduced employment in the relevant industries. Theory predicts that when the firm's state of equilibrium in the labour market is disturbed by an upward revision in the minimum wage, the firm will return to equilibrium by reducing the amount of labour hired to the point where once more the marginal cost of labour equals its marginal productivity.[16]

Even when the "other things the same" assumption is relaxed, reduced employment is still normally predicted as the ultimate outcome of the increased labour costs arising from an upward revision in minimum wage. For example, relaxing the ceteris paribus assumption, we might expect a firm to attempt to avert employment reductions by raising product price. Theory argues, however, that in competitive markets an increased product price will only serve to reduce demand for the product and cause reductions in output and employment. Competition tends to be particularly vigorous where imports already have deep penetration into the market.

Displacement of labour can also arise if employers find it expedient to

[16] In addition to the "other things the same" (ceteris paribus) assumption, the validity of the proposition relies on an assumption of profit maximization by the firm.

substitute other factors of production such as capital for the relatively more expensive labour. Alternatively, different production techniques might be implemented as a labour-saving device.

While displacement of labour is normally predicted as the result of higher labour costs, certain other employer adjustments may obviate such action. For example, measures to upgrade the quality of labour or other steps to improve productivity might compensate for higher labour costs. Alternatively, firms may be prepared to absorb higher labour costs by settling for a lower profit margin.

By examining employment data and employer responses to the questionnaire, an attempt is made to identify, from the range of potential adjustments, actual employer adjustments in the five industries surveyed. As subsequent discussion will demonstrate, the main problem encountered is the fact that, over the longer run, the influences of variables unrelated to the minimum wage adjustment make it extremely difficult to isolate purely minimum wage effects.

Changes in Number Employed

The survey data presented in Table 11 show that the number of employees decreased between January 1969 and January 1970, in each of

Table 11

Number of Employees, Selected Industries, Ontario
November 1968, January 1969 and January 1970

Industries	Number Employed			Percentage Changes	
	Nov. 1968	Nov. 1969	Jan. 1970	1968-69	1969-70
Shoe Factories	7,741	7,667	7,215	- 1.0	- 5.9
Small Leather Goods	2,531	2,443	2,307	- 3.5	- 5.6
Hosiery Mills	2,884	2,789	2,318	- 3.3	-16.9
Children's Clothing	1,364	1,243	1,142	- 8.9	- 8.1
Foundation Garment	1,683	1,597	1,162	- 5.1	-27.2

the five selected industries. In absolute terms, Shoe Factories showed the largest decline with a reduction in the work force of 452 but in percentage terms the Foundation Garment industry had the largest decline – over 27 per cent.

Employment changes for different groups are identified in Table 12.[17] Economic theory predicts that the artificial imposition of a higher floor rate will price certain jobs out of the market, that is, an imposed increase in the wage rate of a low-productivity group will make it necessary for an employer, on economic grounds, to release units of such labour. If this is a valid hypothesis, one might expect that a minimum wage increase would reduce employment to the greatest extent for the employee group most directly affected by the minimum wage revision, namely female non-office employees.

A test of this hypothesis can be made by examining the employment data in Table 12. In the selected industries (Small Leather Goods excepted) the absolute reduction in employment is greatest among the female non-office category. This is to be expected, of course, because in all five industries, female non-office employees were by far the predominant group.

Accordingly, it is more useful to explore the minimum wage effect by examining relative rather than absolute changes in employment. In this way, it can be discovered whether the female non-office group in each industry experienced employment reductions proportionately greater than those occurring in the other categories. Percentage changes in employment between January 1969 and January 1970 show that female non-office workers did not experience the largest percentage decrease in number employed in any of the five industries. In fact, in the case of the Small Leather Goods industry, even the absolute employment reduction of female non-office employees fell far short of the reduction for male non-office employees.

These data reveal significant reductions in employment in the year following the minimum wage revision of January 1969; but those reductions were not concentrated in the lowest paid category, which may indicate that lay-offs of workers were attributable to economic factors other than the minimum wage adjustment. Other factors may have been the cyclical downturn in demand in the economy as a whole, and pressure

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[17] The potential usefulness of data broken down by employee group is suggested by Table 1 where it was noted that female, non-office employees were, in absolute and proportionate terms, most directly affected by the establishment of the $1.30 minimum wage.

TABLE 12

Level of and Changes in Employment in Selected Industries, January 1969 and January 1970, Ontario

Industry	Number Employed		Change in Employment 1969-1970	
	January 1969	January 1970	Absolute	Percentage
SHOE FACTORIES				
Non-office				
Male	2,441	2,362	-79	-3.2
Female	4,520	4,280	-240	-5.3
Office				
Male	252	194	-58	-23.0
Female	454	379	-75	-16.5
SMALL LEATHER GOODS				
Non-office				
Male	723	625	-98	-13.6
Female	1,486	1,471	-15	-1.0
Office				
Male	101	78	-23	-22.8
Female	133	133	-	-
HOSIERY MILLS				
Non-office				
Male	606	484	-122	-20.1
Female	2,032	1,752	-280	-13.8
Office				
Male	23	5	-18	-78.3
Female	128	77	-51	-39.8
CHILDREN'S CLOTHING				
Non-office				
Male	122	111	-11	-9.0
Female	1,012	955	-57	-5.6
Office				
Male	14	7	-7	-50.0
Female	95	69	-26	-27.4
FOUNDATION GARMENT				
Non-office				
Male	157	102	-55	-35.0
Female	1,315	919	-396	-30.1
Office				
Male	28	37	+9	+32.1
Female	97	104	+7	+7.2
ALL 5 INDUSTRIES				
Non-office				
Male	4,049	3,684	-365	-9.0
Female	10,365	9,377	-988	-9.5
Office				
Male	418	321	-97	-23.2
Female	907	762	-145	-16.0

of competition from imports and other Canadian provinces. A clearer insight into this question may be provided when employer responses to the questionnaire are discussed.

Changes in Hours Worked

A reduction in employment need not merely take the form of a lesser number of employees but may involve some reduction in the number of hours worked by those remaining in employment. Table 13 reveals that substantial decreases in aggregate hours worked by both office and non-office categories[18] in each of the five selected industries occurred between January 1969 and January 1970. The decline in aggregate hours worked is largely explained, of course, by the reduction in number of employees, but Table 14 shows that average hours worked per employee also declined between January 1969 and January 1970 in the selected industries.[19] These declines in average hours worked per employee suggest that some of the reduction in employment was in the form of reduced hours worked by those who remained in employment.[20]

The fall in average hours worked per employee was due mainly to the substantial reduction in number of overtime hours worked in the selected industries. In each of the selected industries, with the exception of Children's Clothing, there was a substantial decline in the number of overtime hours worked (Table 15).

The decline in overtime hours worked has a number of possible explanations. The higher minimum wage may have been a factor to the extent that employers faced with payment of higher straight-time hourly rates became less willing to pay premium rates for overtime work. In some cases, employers may have extracted greater productivity from employees during normal hours to avoid overtime premium pay and offset the higher minimum wage cost. An equally plausible explanation is that product

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[18] The exception is the office group in the Foundation Garment industry where hours worked increased due to an increase in number of employees between January 1969 and January 1970.

[19] Office employees in the Small Leather Goods and the Foundation Garment Industries are the exceptions.

[20] It is possible, of course, for a fall in average hours worked per employee to be caused by a concentration of unemployment among those who had been working more than the average number of hours. This can be discounted in the present case (see Table 14).

demand in January 1970 was less than it was in January 1969 (see Table 25). In this case employers would naturally reduce overtime hours worked per employee.

Table 13

Aggregate Number of Hours Worked in Pay Periods Ending January 18, 1969 and January 17, 1970, Office and Non-Office Employees Selected Industries

Industry and Employee Class	Thousands of Man Hours		% Change 1969-70
	January 1969	January 1970	
SHOE FACTORIES			
Non-Office	273.6	250.8	- 8.3
Office	27.0	21.4	-20.7
SMALL LEATHER GOODS			
Non-Office	85.2	72.8	-14.6
Office	8.4	8.0	- 4.8
HOSIERY MILLS			
Non-Office	102.8	85.5	-16.8
Office	5.6	2.9	-48.2
CHILDREN'S CLOTHING			
Non-Office	41.9	39.4	- 6.0
Office	4.0	2.7	-32.5
FOUNDATION GARMENT			
Non-Office	56.1	38.2	-31.9
Office	4.5	5.2	+15.6
ALL FIVE INDUSTRIES			
Non-Office	559.6	486.7	-13.0
Office	49.5	40.2	-18.0

Table 14

Average Hours Worked per Employee in Pay Periods Ending January 18, 1969 and January 17, 1970, Office and Non-Office Employees, Selected Industries, Ontario

Industry and Employee Class	Number of Hours		Changes 1969-1970	
	Jan. 1969	Jan. 1970	Absolute (Hours)	Percentage
MANUFACTURING*	40.1	39.6	-0.5	-1.2
SHOE FACTORIES				
Non-Office	39.3	37.3	-2.0	-5.1
Office	38.3	37.1	-1.2	-3.1
SMALL LEATHER GOODS				
Non-Office	38.6	34.7	-3.9	-10.1
Office	36.1	38.1	+2.0	+ 5.5
HOSIERY MILLS				
Non-Office	39.0	38.2	-0.8	-2.1
Office	37.2	35.5	-1.7	-4.6
CHILDREN'S CLOTHING				
Non-Office	37.0	37.0	0	0
Office	36.4	35.0	-1.4	-3.8
FOUNDATION GARMENT				
Non-Office	38.2	37.5	-0.7	-1.8
Office	35.7	36.6	+0.9	+2.5
ALL FIVE INDUSTRIES				
Non-Office	38.8	37.3	-1.5	-3.9
Office	37.4	37.1	-0.3	-0.8

*Source: Man-Hours and Hourly Earnings, Cat. No. 72-003, Dominion Bureau of Statistics, Ottawa. Figures are for hourly-rate wage earners.

Table 15

Number of Overtime Hours Worked in Selected Pay Periods and Selected Industries, Ontario

Industries	Number of Overtime Hours Worked by All Non-Supervisory Employees		
	Jan. 1969*	Jan. 1970*	% Change 1969-70
Shoe Factories	10,914	6,869	-37.1
Small Leather Goods	3,047	1,829	-40.0
Hosiery Mills	2,252	2,051	- 8.9
Children's Clothing	1,208	1,266	+ 4.8
Foundation Garment	1,241	803	-35.3
All Five Industries	18,662	12,818	-31.3

* Figures refer to one pay period.

Equally significant to the reduction of overtime hours may be the fact that, along with the minimum wage regulation of January 1, 1969, it became a statutory obligation for employers to pay a rate of one and a half times regular pay for any hours worked in excess of forty-eight a week. It is interesting to note from Table 16, that in four of the five selected industries (Hosiery Mills the exception), the number of employees working exactly forty-eight hours increased between January 1969 and January 1970. In three of these four industries (Children's Clothing the exception) there was a reduction in the number of employees working more than forty-eight hours. A reduction also took place in the number of employees working between thirty-seven and forty-seven hours. These observations suggest that, in at least three of the five selected industries (Shoe Factories, Small Leather Goods, and Foundation Garment) some cut in hours was made by employers to avoid paying the new statutory overtime premiums.

Although there was a substantial reduction in hours worked in all five selected industries, there was not a uniform decline for all firms. For the

Table 16

Percentage Changes in Number of Employees Between January 1969 and January 1970 According to the Number of Hours Worked in Selected Pay Periods and Selected Industries, Ontario

Industry	% Changes in Number of Employees			
	Range of Hours Worked			
	Less Than 37	37 to 47	48	Over 48
Shoe Factories	+52.2	−23.3	+ 16.1	− 6.5
Small Leather Goods	+58.7	−25.0	+ 33.3	− 44.9
Hosiery Mills	+ 6.9	−25.3	− 40.0	+ 2.
Children's Clothing	− 9.0	−11.1	+ 13.2	+105.6
Foundation Garment	−23.4	−22.9	+637.5	− 82.4

periods January 1969 and January 1970, Table 17 shows percentage changes in aggregate hours worked in the five selected industries, with constituent firms classified by size according to number of employees. The 1969 and 1970 data are shown for firms according to their size classification as of January 1969. This device allows size classification to be treated as constant in spite of the fact that employment declines between January 1969 and January 1970 may have reduced the actual size classification of a number of firms.

It is contended by some that small firms are likely to be most vulnerable to the cost increases that accompany minimum wage legislation.[21] If this proposition is accepted, we would expect smaller firms to lay off relatively greater number of employees in comparison with large firms. One would expect this to be reflected in relatively large reductions in aggregate hours worked by the smaller firms. From Table 17 there is no evidence that firms with fewer employees experienced greater cut-backs in

[21] See Table 2, p. 9, where it is noted that prior to the minimum wage revision, the smallest establishment tended to have the highest proportion of employees with less than $1.30 an hour earnings.

aggregate hours worked than did larger firms. On the contrary, in the case of the Shoe Factories it is seen that in the three smallest categories, aggregate number of hours worked actually increased, while in all other categories except the largest, there was a decrease in the number of hours worked.

Also, for three of the five selected industries (Hosiery Mills and Foundation Garment the exceptions), there was an increase in the aggregate number of hours worked in firms of less than five employees. This is largely explained by the entry between January 1969 and January 1970 of new firms of less than five employees.

Table 17

Percentage Changes Between January 1969 and January 1970 in Aggregate Hours Worked in Various Establishment Sizes, According to Number of Employees Selected Pay Periods, Selected Industries, Ontario

Size of Establishment, by Number of Employees (as of January 1969)	Percentage Changes in Hours Worked				
	Industry				
	Shoe Factories	Small Leather Goods	Hosiery Mills	Children's Clothing	Foundation Garment
Less than 5	+1,325.1	+480.0	-34.4	+326.5	n.a
5 to 9	+22.3	+23.5	-35.0	+ 14.6	n.a
10 to 19	+ 3.8	- 14.8	-11.3	- 29.8	-69.7
20 to 49	- 8.1	- 14.4	- 4.2	- 17.8	n.a
50 to 99	- 5.8	- 13.2	-27.0	-18.6	-40.1
100 to 249	-11.9	- 18.1	+ 2.9	- 2.3	-12.7
250 to 499	-22.3	- n.a	-60.0	- 22.1	-39.2

n.a. Indicates that there were no firms in the size category.

Table 18 illustrates even more emphatically the fact that smaller firms experienced no greater reductions in aggregate hours worked than larger firms. On the contrary, in both the Shoe Factories and Children's Clothing industry, the smaller firms (value of shipments less than $5 million per annum) showed an increase in aggregate hours worked. In the other three industries there was no evidence of any tendency for smaller firms to experience greater declines in aggregate hours than larger firms.

The above figures refer to aggregate hours worked but these bear a direct relationship with number of employees. The evidence in Table 18 especially suggests that at least in two of the five selected industries (Shoe

Table 18

Percentage Changes in Aggregate Hours Worked Between January 1969 and January 1970 by Size of Establishment According to Annual Value of Shipments, Selected Pay Periods, Selected Industries, Ontario

Size of Establishments by Annual Value of Shipments ($000) (As of January 1969)	Percentage Changes in Hours Worked Between January 1969 and January 1970				
	Industry				
	Shoe Factories	Small Leather Goods	Hosiery Mills	Children's Clothing	Foundation Garment
Less than 20	- 4.1	+79.9	-14.5	+170.3	-57.2
20 to less than 50	n.a.	-11.9	+12.4	+110.5	n.a.
50 to less than 100	+ 2.9	-32.7	n.a.	+120.0	n.a.
100 to less than 500	+24.3	18.8	- 9.0	+ 12.5	n.a.
500 to less than 1,000	-10.2	- 7.1	-18.3	- 9.0	-100.0
1,000 to less than 5,000	- 8.1	-14.1	+ 1.9	- 32.7	+ 4.5
5,000 to less than 10,000	- 9.0	-23.2	- 3.8	- 8.7	-18.0
10,000 to less than 25,000	-26.9	-22.2	n.a.	n.a.	-42.9
more than 25,000	- 9.0	n.a.	-39.4	n.a.	n.a.

n.a. Indicates no establishments in the size category.

Factories and Children's Clothing) the smaller firms suffered less from reduced employment than the larger firms. The absence of evidence that small firms experienced greater lay-offs than large firms does not imply that the increased minimum wage had no significant effect on employment. It simply suggests that smaller firms do not appear to have been more sensitive than larger firms to any cost pressures of the minimum wage legislation.

The foregoing data have demonstrated that the reduction in employment subsequent to the minimum wage revision took the form of a reduced number of employees and a reduced number of hours worked per employee, but the data are unable to identify what portion of reduced employment was due to the minimum wage adjustment.

RESPONSES TO OPEN-ENDED QUESTIONS

In addition to quantitative data, the survey was designed to generate qualitative data on adjustments at the establishment level to the January 1969 minimum wage revision. A number of open-ended questions were submitted to the 212 establishments of the five selected industries in January 1970. In using a point in time one year after the minimum wage revision, it was hoped to identify adjustments which could be made only after a time lag.

Respondents were asked eight basic questions, each of which contemplated a method of adjustment available to establishments in response to the minimum wage revision. To those establishments which responded in the affirmative to one of the eight basic questions, supplementary questions were asked in an attempt to identify the reason(s) for the employment effects of the relevant adjustment. It should be noted that not all adjustments imply a reduction in employment.

In administering the questionnaire, no reference was made to the minimum wage legislation in order to avoid any bias that might arise from leading the respondent. The problem with this general approach to questioning is that responses may be too general to provide adequate information. For example, many firms gave "increased labour costs" as a reason for undertaking a certain policy. In some cases, the minimum wage increase may have been an important factor in raising labour costs while in other cases unimportant. The general response "increased labour costs," however, conceals any contribution that the change in minimum wage may have made to increasing labour costs. For this reason, the open-ended questions may have been unable to identify the full extent of the role of

the minimum wage in influencing policies implemented by firms.

The eight basic questions are presented in Table 19 and the negative and affirmative responses enumerated alongside. It is evident that the introduction of new machinery and the increasing of product prices were the only actions taken by a significant proportion of the establishments. The large number of negative responses to the other six questions seems to indicate that most firms did not use these methods to adjust to the minimum wage increase. A summary analysis of employer responses to each of the eight basic and related supplementary questions is now presented.

Elimination of Job Classifications

Questions under this heading were designed to determine whether the increase in minimum wage priced any jobs out of the market. In the five industries, eighteen establishments (just over eight per cent) eliminated job classifications.

In the five industries, 30 lay-offs and 2 transfers of employees arose from the elimination of job classifications,[22] but in none of the above cases was the minimum wage cited by employers as relevant to an employee lay-off or transfer. A general fall in business or a general desire to cut wage costs were the most commonly cited reasons for eliminating job classifications.

The System of Payment

Questions in this section sought to determine in particular whether establishments reacted to the change in minimum wage by substituting a piece rate for a time rate system of payment. The rationale of such a change is that within a framework of sufficiently rigorous piece rates, an employee could earn an average of $1.30 an hour only by producing more than he did under the old minimum wage. The employer, therefore, could offset the increased minimum hourly rate by obtaining more production per hour from an employee. Any employee unable to earn an average of

[22] A further 106 lay-offs and 32 transfers resulted from elimination of job classifications but these involved the introduction of new machinery, dropping a product line or a change in the flow of work and are considered below in the respective paragraphs.

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Table 19

Special Survey of Selected Manufacturing Industries

Questions Asked*	Responses to Questionnaire by Establishments											
	Industry											
	Shoe Factories		Small Leather Goods		Hosiery Mills		Children's Clothing		Foundation Garment		All Five Industries	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
1. Were any job classifications eliminated?	7	64	2	36	8	30	0	33	1	11	18	174
2. Was the system of payment of any employees converted from an hourly rate to a piece rate basis or vice versa?	8	63	2	36	1	36	0	33	1	11	13	179
3. Were any changes introduced to shorten an employee's regular working day?	0	71	0	38	0	38	0	33	0	12	0	252
4. Were any new personnel policies introduced to upgrade the quality of the work force?	13	58	3	35	4	34	2	31	0	12	22	170
5. Were any substantial changes made in the organization and flow of work or in the layout of the establishment that did not involve the purchase of new machinery?	9	62	8	30	3	35	3	30	1	11	24	168
6. Was any new machinery introduced?	51	20	28	10	26	12	14	19	8	4	127	85
7. Were any products dropped or added?	14	57	13	45	9	29	7	26	6	6	49	163
8. Were the prices of any products increased?	52	19	30	28	9	29	13	20	4	8	108	104

* Each question refers to the period between January 1, 1969 and January 17, 1970.

$1.30 an hour under the piece rate system would be replaced to avoid any infringement of the law.

Table 19 shows that only thirteen establishments in the five industries made any change in their system of payment and that contrary to expectations, five of these establishments switched from a piece rate to a time rate system of payment. The other eight establishments switched from straight time payment to some form of piece rate or bonus incentive system and, in all, 444 employees were involved in the shift. All eight establishments shifted from the time system of payment in order to boost productivity but only three (involving 100 employees) cited the increased minimum wage as the reason for the change.

Although relatively few establishments switched to a system of piece rates, a considerable number of establishments already had such a system in operation. A piece rate system of payment creates problems for minimum wage legislation, which aims at improving the earnings of the low wage groups. This problem is illustrated by the policy adopted by one of the establishments surveyed. When the minimum wage rose from $1 to $1.30 an hour, the firm pursued a policy of dismissing any pieceworker who could not produce enough over the length of a pay period to earn an average of $1.30 an hour. Trainees were allowed two months to reach the required standard.

It is clear that minimum wage increases may create a problem for piece workers, in that a rise in the legal hourly minimum wage rate may require them to raise their level of efficiency. Failure to raise their efficiency might jeopardize the job security of such piece workers and faster labour turnover might ensue. It is evident that gains in efficiency resulting from the higher minimum wage would have to be weighed against any welfare losses of those dismissed for failure to attain the higher standards of efficiency.

New Personnel Policies

Twenty-two establishments introduced new personnel policies that were designed to upgrade the quality of the work force. In three establishments (Shoe Factories with combined employment of 350), the higher minimum wage had the effect of reducing the training period. Effectively trainees were required to be ready for fully productive work in a shorter time period, or else be replaced. Seven other establishments described new hiring policies designed to raise the standard of entry but none specified the higher minimum wage as the reason for a new policy. Of the remaining twelve establishments, eleven either introduced their own or participated

in government programmes to train employees. Such programmes ranged from advanced training of engineers to basic English for immigrant workers. Again no establishments cited the minimum wage increase as a reason for any new training programme.

Flow of Work and Plant Layout

Twenty-four establishments in the five industries made some change in the organization and flow of work or in-plant layout that did not involve the purchase of new machinery. In eleven of these establishments, the changes in work flow or plant layout appear to have been totally unrelated to the minimum wage legislation and in none of these cases was the minimum wage increase cited as a contributing factor. The changes either accompanied a move by the firm to new premises, the expansion of existing premises or the production of a new style. Also, in none of these establishments did the change in work flow or layout cause a reduction in employment.

The remaining thirteen establishments changed work flow or plant layout in order to cut costs or increase efficiency. In three establishments the change involved new assembly line techniques and a reduction of at least forty-two employees. However, although all thirteen establishments made changes with a view to cutting costs or increasing efficiency, no attribution was made to the higher minimum wage.

Introduction of New Machinery

Questions under this heading sought to determine whether the minimum wage increase induced firms to substitute capital for the higher priced labour. Table 19 demonstrates that 127 (59.9%) of the 212 surveyed establishments installed new machinery during the period January 1, 1969 to January 17, 1970. Supplementary questions sought to establish the reasons for installing the new machinery and these are summarized under five main headings in Table 20. It can be seen from this table that eight of the 127 establishments installed new machinery for replacement or expansion purposes and these activities are unlikely to have been related to the minimum wage legislation. Also, in no case was there any related decline in employment. [23]

[23] The twelve cases involving new product lines are considered in the next subsection.

Table 20

Number of Establishments According to the Reason for Installing New Machinery, Between January 1, 1969 and January 17, 1970, Ontario Selected Industries

Reason for New Machinery	Number of Establishments by Industry					
	Shoe Factories	Small Leather Goods	Hosiery Mills	Children's Clothing	Foundation Garment	All Five Industries
To Replace Old Machinery	10	10	6	6	1	33
To Expand Production	23	7	4	2	1	37
To Increase the Scope of Operations	1	7	2	0	0	10
To Increase Efficiency	11	4	9	6	5	35
To Move into a New Product Line	6	0	5	0	1	12
TOTAL	51	28	26	14	8	127

Table 20 indicates that thirty-five establishments installed machinery in order to increase efficiency,[24] but in only one establishment was the minimum wage cited as the reason for the change. This establishment, a Shoe Factory, reacted to the higher minimum wage by installing a machine to improve the training of new employees and so cut down on the time normally required to get trainees into fully productive employment. In the

[24] Increased efficiency and reduced costs appear to be synonymous in the minds of respondents.

other thirty-six establishments the reason for installing machinery was generally cited as desire to reduce costs, with no specific mention made of the minimum wage. There is no evidence, therefore, of capital for labour substitution caused by the higher minimum wage.

Products Dropped or Added

The aim of this section was to determine whether any establishments reacted to the minimum wage increase by changing their product mix. Clearly firms might be compelled to eliminate or replace products rendered uneconomic by the increase in minimum wage. Alternatively, the higher costs incurred after the minimum wage legislation might induce firms to increase sales revenue by adding new products to existing lines.

Table 21 shows that twenty-two establishments added a new product(s) to existing lines but none of these establishments cited the higher minimum wage as even a contributory cause of the decision to add a new product to existing lines. In the case of nine establishments, market opportunities inspired the decision to add to the product line while the remaining establishments explained additional products as an expedient to bolster earnings from existing lines, which were suffering either from stiff competition from outside the province or from a cyclical downturn in demand.

The most common reason given for dropping a product was that it became uneconomic to produce. None of the establishments cited the higher minimum wage but several specified higher labour costs as at least a contributory cause of the decision to drop a product. In many cases, however, higher costs give only a partial explanation. Some establishments indicated part of the problem was that certain of their products were in such close competition with products from abroad or Quebec that it was impossible to absorb higher costs by raising price. In such cases, the relevant product was dropped and production concentrated on lines for which prices could be raised without a loss of sales to competitors.

The same economic forces were at work in the case of eight of the sixteen establishments which replaced existing products with new ones. In most cases, the new product promised a less competitive market than the old one and so provided more scope to absorb higher costs through higher prices. The other eight cases of product substitution merely reflected responses to style or demand changes in the industries concerned.

The responses to questions regarding the switching of product lines gives no direct indication that the minimum wage increase was a relevant

factor in any establishment's decision to change. There is some evidence, however, that some firms were obliged to drop or replace product lines where competition prohibited the absorption of higher costs by higher prices. In such cases, the minimum wage increase may have been relevant to the business decision to revise product lines.

Table 21

Number of Establishments to Add, Drop or Replace Products, Selected Industries, Ontario, January 1, 1969 to January 17, 1970

Industry	Number of Establishments		
	Product Added	Product Dropped Without Replacement	Product Dropped But Replaced
Shoe Factories	6	5	3
Small Leather Goods	5	4	3
Hosiery Mills	3	1	5
Children's Clothing	5	0	2
Foundation Garment	3	1	3
All Five Industries	22	11	16

Price Increases

Table 19 reveals that the policy implemented by the largest number of establishments in the five selected industries was an increase of product price. In all, seventy-five large and thirty-three small establishments raised prices. On average, over the five industries, large firms (55%) had a greater propensity to raise prices than small firms (44%). This is largely explained by the extremely high propensity of large Shoe Factories to raise prices. Shoe factories were the largest of the five industries and the only industry in which large firms had a higher propensity to raise prices than small establishments.

In Table 22 the ranges of price increases are examined and it is seen that the vast majority of price rises were under ten per cent and well over a third were less than five per cent. Establishments were asked to state reasons for their price increases and, of the 109 establishments to raise prices, only five cited the higher minimum wage as directly responsible.

Table 22

Number of Establishments Raising Average Product Prices According to Range of Price Increase, by Establishment Size Category, Selected Industries, Ontario, January 1, 1969 to January 17, 1970

Interest and Size of Establishment	Range of Percentage Price Increase and Number of Establishments				
	Less than 5%	5% to less than 10%	10% to less than 15%	15% and over	Total*
SHOE FACTORIES					
Large	16	17	5	1	42
Small	3	6	0	1	10
SMALL LEATHER GOODS					
Large	6	9	1	1	17
Small	6	4	2	1	13
HOSIERY MILLS					
Large	4	0	0	0	5
Small	2	1	0	1	5
CHILDREN'S CLOTHING					
Large	2	3	2	1	8
Small	0	2	3	0	5
FOUNDATION GARMENT					
Large	1	1	1	0	3
Small	0	1	0	0	1
ALL FIVE INDUSTRIES					
Large	29	30	9	3	75
Small	11	14	5	3	34

* The exclusion of "unknown" price increases from the table account for failure of components to sum to total.

However, it should be noted that of the remaining 104 establishments to raise prices, four cited higher labour costs as solely responsible for the price increase while a further seventy-nine establishments referred to increased labour cost as a contributory cause.

From these responses it is rather difficult to reach a firm conclusion about the extent of the impact of the minimum wage increase on product prices. It is true that only five establishments cited the minimum wage adjustment as a specific reason for product price increases, but one cannot ignore the fact that a substantial number of respondents identified general labour cost increases as either the sole or a contributory factor underlying such price increases. A reasonable interpretation would appear to be that, while the minimum wage increase was not by itself a major factor responsible for produce price increases, it was a contributory factor in a substantial number of cases.

Summary of Findings From Open-Ended Questions

On the strength of the responses of establishments to the interviewers' questions, it appears that minimum wage increase led to adjustments by employers in very few cases. It was seen from Table 19 that, except for the raising of prices and the introduction of new machinery, the anticipated adjustments were made by a small percentage of the establishments surveyed. Moreover, in only six cases was the minimum wage cited as the cause of the adjustment. The introduction of machinery, while a common occurrence, was attributed to the minimum wage in only one instance so that substitution of capital for labour does not seem to have been a relevant adjustment. It is possible, of course, that this process of adjustment may have required a time period of more than a year to reveal its full impact.

More than half the surveyed establishments raised product prices and, while only five attributed their actions directly to the minimum wage increase, the price increases of other establishments may have been influenced by the upward revision in the minimum wage. However, the extent of such influence is uncertain.

One deficiency of the overall study design is that it is impossible to obtain responses from the seventeen establishments[25] that disappeared from the selected industries between January 1969 and January 1970.

[25] The entry of ten new establishments reduced the net loss to seven.

Evidently a possible adjustment to the minimum wage increase might be to leave the industry but no information is available in this context.

It is clear from the responses that in most cases the minimum wage legislation was only one of many important factors confronting the establishments surveyed. In many cases, competition from abroad and from Quebec and the general downturn in business activity were more urgent problems than the minimum wage legislation. The rising cost of materials was of as much concern to most firms as the higher cost of labour.

In general, it appears that the 1969 minimum wage legislation was rarely the major cause of any adjustment by an establishment in the five industries surveyed. The presence of other important influences on the policies of the establishments prevented the emergence of any clear pattern of explanation of adjustments. This suggests, perhaps, that an alternative method of enquiry may be required to generate more useful information regarding the adjustment by establishments to minimum wage legislation.

PROBLEMS IN IDENTIFYING THE MINIMUM WAGE EFFECT

It is evident that neither the qualitative nor the quantitative data give a clear indication of the longer run employer adjustments to the thirty cents an hour minimum wage increases. The ambiguity may be due to the fact that in the year following the minimum wage increase, employers were subject to more significant influences than the minimum wage adjustment. In this case, it might be difficult to identify the precise effect of the minimum wage change on employer policies. On the face of it, one might expect a thirty per cent increase in the minimum wage to have had a significant impact on employer labour costs in certain low-wage industries. However, the actual impact depends not on the nominal increase in the statutory floor rate but the extent to which the new floor exceeds the wage rates that actually prevail prior to the statutory adjustment.

The actual impact on each firm is also determined by the proportion of employees that were actually earning less than $1.30 an hour when it was established as the statutory minimum rate.

An attempt has been made to assess the potential direct impact of the $1.30 on labour costs in the five industries based on the distribution of

employees by hourly wage rates in November 1968. For the five industries as a whole, it is estimated that payment of a $1.30 minimum to all employees (as of November 1968) would have raised hourly wage costs by approximately 1.5 per cent. The estimated increases were less in Shoe Factories (1.1%) and Small Leather Goods (1.2%) and relatively high in Children's Clothing (2.8%) (see Table 23). While the direct cost increases appear to have been rather modest it must be emphasized that these estimates do not account for any secondary wage cost increases arising from a re-establishment of the wage structure disturbed by the minimum wage revision. The present analysis is not equipped to estimate secondary increases in wage costs.

Table 23

Estimated Percentage Hourly Wage Cost Increases Directly Arising from Payment of a $1.30 Minimum, Selected Industries, Ontario, November 1968

Industry (SIC)	% Increase in Hourly Wage Costs
Shoe Factories (174)	1.1
Small Leather Goods (179)	1.2
Hosiery Mills (231)	1.8
Children's Clothing (245)	2.8
Foundation Garment (248)	1.9
All Five Industries	1.5

The apparently small direct impact of the minimum wage increase on labour costs means that, if other factors exerted strong influence of employment, any "minimum wage" effects will be difficult to identify. There is evidence to suggest that in the year following the establishment of the $1.30 minimum wage, other factors did operate with significant effect on employment in the Ontario economy in general and on the selected industries. The aggregate level of employment in an economy is a function of (among other things) the general level of demand and business activity

Table 24

Seasonally Adjusted Economic Indicators
Selected Periods, Ontario

Economic Indicators	Jan. 1969	June 1969	Jan. 1970
Average Weekly Hours in Manufacturing (number)	40.5	40.1	39.7
Commercial/Institutional and Industrial Construction Contracts ($ million)	111.9	93.9	72.1
Urban Housing starts (annual rate, number)	80,000	63,900	36,600
Toronto Stock Exchange (industrial index) 1956 = 100	192.47	177.34	177.89
Ratio of Inventories to Shipments (Manuf.)	1.97	1.97	2.07
Business Failures [u] liabilities ($ million)	2.9	2.0	9.9
3-month Treasury Bill Rate (%) [u.c.]	6.38	7.13	7.78
Unemployed (000s)	82	109	96
Unemployed as % of Labour Force	2.7	3.6	3.2

u = Not seasonally adjusted c = Means figures are applicable to Canada

Source: Ontario Statistical Review.

in the economy. Canada entered the year 1969 with its economy expanding at an excessive pace and the Governments of Canada and Ontario were compelled to adopt restrictive policies to combat inflation. In the United States restrictive policies had already begun in the autumn of 1968 and continued throughout 1969 so that by the third quarter of 1969 the

U.S. growth rate had been cut to 2 per cent. The deceleration of business activity in Ontario between January 1969 and January 1970 is evident upon examination of certain economic indicators (see Table 24). Of particular interest is the fact the number of unemployed and the rate of unemployment in the economy as a whole were significantly higher in January 1970 than in January 1969.

The dampened economic activity in late 1969 appears to have contributed to reduced output in at least four of the five selected industries (see Table 25). The general slowdown of business activity in 1969 and the reduced output in four of the five selected industries are likely to have been significant factors explaining the reduction in employment that occurred between January 1969 and January 1970. In view of this and the relatively insignificant changes in labour costs apparently generated directly by the minimum wage revisions (see Table 23), the employment declines observed in this study cannot be attributed solely or even largely to the minimum wage revision.

Table 25

Actual and Changes in Value of Shipments Selected Industries Ontario 1968–1969

Industry (SIC)	Value of Shipments ($000)		Annual Change 1968-69	
	1968	1969	Actual ($000)	%
Shoe Factories (174)	83,012[a]	82,170	-842	-1.0
Small Leather Goods (179)	24,826[a]	23,553	-1,273	-5.1
Hosiery Mills (231)	34,034[b]	33,638	-396	-1.2
Children's Clothing (245)	13,606[b]	14,217	+611	+4.5
Foundation Garment (248)	21,665	20,103	-1,562	-7.2

[a] Indicates values have been deflated to 1961 prices.

[b] Values are at current prices.

Source of data: Annual Census of Manufacturers, DBS Catalogue Nos. 33-203, 33-205, 34-215, 34-217 and 34-212, Table 1.

SUMMARY AND CONCLUSIONS

The purpose of this study was to obtain some empirical insight into the controversy of whether a statutory minimum wage offers useful assistance to lower-paid workers with little bargaining power, or the whether adverse side effects such as lay-offs tend to counteract any benefits. With respect to benefits to low-paid workers, the study gathered data on wage rates and distributions in five low-wage industries in an attempt to measure the effect of the new minimum floor on wage levels and differentials. To identify both short and longer run effects, data were gathered for three points in time, one shortly before, one shortly after and one a year after the minimum wage revision.

To identify side effects on employment, data were also gathered on the numbers of employees and hours worked. To supplement the quantitative data a number of open-ended questions were put to all establishments. From responses to the questions, it was hoped to determine to what extent employers reacted to the minimum wage revision in ways that led to reduced employment. The questions also sought to determine the extent to which employers adjusted to the minimum wage revision in ways that involved no reduction in employment.

Analysis of the employment data produced no clear picture of the impact of the minimum wage revision. Between January 1969 and January 1970 employment fell by approximately ten per cent in the five industries as a whole, but it was not possible to isolate the minimum wage effect for two reasons. Firstly, estimates suggest that, in spite of the substantial thirty per cent increase in the nominal floor rate, the direct impact of the new floor on wage costs in the five industries was fairly modest (approximately 1.5% for the five industries as a whole). A second factor is that economic indicators for the year subsequent to the minimum wage revisions, suggest that a cyclical reduction in business activity may have had a dominant effect on the level of output and employment in the selected industries. As a result this study was not able to isolate whatever effect the minimum wage adjustment had on employment.

The data generated by the open-ended questions throw limited light on the question of employer adjustment. Only infrequent reference was made by employers to the minimum wage change. While this may suggest that the minimum wage is of limited significance, no firm conclusions can be drawn. The open-ended questions did indicate that more than half the establishments raised product prices in the year following the minimum wage adjustment so it was likely that these establishments were in a

position to absorb the higher labour costs arising from the higher floor rate. It must be concluded, however, that the analysis is unable to identify the extent to which the minimum wage change caused employment reductions and other employer adjustments.

The usefulness of the statutory minimum wage cannot be judged purely on the presence or absence of adverse side effects. The central issue is whether the statutory minimum wage affords low-wage employees, with little bargaining power, tangible benefits. The data suggest that in the short run the new minimum wage had the effect of raising hourly wage rates at the bottom of the scale and thereby compressing the structure. In addition to a compression of intra-industry differentials, there is evidence of a narrowing of the differential between average hourly wage rates in manufacturing as a whole and each of the five selected industries. In the long run, however, it is seen that there was a trend toward the re-establishment of the differentials that prevailed prior to the minimum wage revision. In some cases the lowest paid groups were worse off relative to employees further up the wage scale a year after the revision of the minimum wage. These observations suggest that after the inital compression of wage rates caused by an upward revision of the statutory minimum wage, certain forces were set into motion and served to erode the initial gain experienced by the lowest paid employees.

One qualification is necessary in view of the fact that data are not available for the long-run trend of wage rate differentials in the five selected industries. Without such data, it is not possible to test the alternative hypothesis that the minimum wage increase put a temporary brake on a long-run trend of ever-widening differentials. While the latter hypothesis may have less intuitive appeal, the lack of long-run time series data makes it necessary to qualify any conclusions drawn from the data generated in this study.

In spite of this qualification, a question must be raised as to the effectiveness of a minimum wage programme as a device for assisting low-paid workers. While evidence suggests short-run gains for employees in both absolute and relative terms, there is reason to believe that in the long run such gains may be eroded. Such erosion may be explained by market and institutional pressures arising out of the relatively fragmented bargaining structure that is a feature of the North American scene. It may be argued that such erosion of gains to low-paid employees might be prevented by more frequent revision of the floor rate, but this would run the risk of placing too great a burden on individual employers. In industries subject to vigorous competition from abroad and other Canadian provinces (e.g. textile industries), individual firms might find it increasingly difficult to absorb higher labour costs while remaining com-

petitive and negative employment effects might ensue. The approach in Ontario over recent years has been one of periodic, moderate upward revisions in the statutory minimum wage. This approach aims at, on the one hand, keeping the wages of low-paid employees in line with rising prices and general wage levels while, on the other hand, avoiding excessive negative employment and other side effects.

SUBSEQUENT RESEARCH

If industry-wide data are to be used to assess the impact of minimum wage legislation, steps must be taken to develop a technique and generate data capable of distinguishing the "minimum wage" effect from the variety of economic variables that may influence employment in low wage industries over a period of time. In particular, an attempt must be made to obtain information on the relationship that exists between changes in final output of goods or services and employment in the relevant industries. This is best accomplished by generating time series data for a number of years for value of sales or shipments by all employers in the relevant industries. Similar time series data on number employed and hours worked should be generated and, by means of regression analysis, the relationship between changes in value of sales or shipments and changes in employment (number of employees and hours worked) can be estimated. Having done this it will then be possible to compare value of sales/shipments and number employed/hours of work in a selected industry at a point before and a point after a minimum wage revison. With knowledge of the relationship between changes in sales and changes in employment, it may then be possible to identify any change in employment attributable purely to a minimum wage adjustment.

The main problem with this approach is the difficulty in isolating the purely minimum wage effect. For example, changing technology may influence employment and measurement of changes in the former may not always be straightforward. Furthermore, the minimum wage change may itself affect the level of sales/shipments and so employment and identification of this effect may be extremely difficult. However, in spite of such difficulties, the suggested approach offers some scope for identifying the effect of a minimum wage change on employment in low wage industries. The necessary data would have to be generated for a number of years by survey because Statistics Canada information is not available for establishments with less than twenty employees. Use of sampling techniques would, of course, reduce the survey population size.

Supplementary to the use of an industry-wide approach, it may be

profitable to explore a case study method of assessing the impact of minimum wage adjustments. This would involve selecting 'typical' employers in low wage industries and closely examining the impact of a minimum wage increase on costs, production techniques, product lines, prices, etc. The value of the case study method would be a more accurate identification of the effect of minimum wage increase on the total operations of the establishment under review. The limitation to this approach is, of course, that there may be no such entity as the 'typical' establishment and generalization may prove impossible.

The case-study approach could be extended to cross-sectional comparisons of firms varying in the proportion of their workers who are below the minimum wage at the date of its revision. This proportion could then be correlated with various indicators of firms' behaviour such as employment changes and price changes.

While each of the suggested approaches has limitations, the combined use of the techniques would greatly improve understanding of the effects of minimum wage legislation on low wage industries in Ontario.